



The aesthetics of water and land: A promising concept for managing scarce water resources under climate change

Author(s): Tielborger K, Fleischer A, Menzel L, Metz J, Sternberg M
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Abstract:

The eastern Mediterranean faces a severe water crisis: water supply decreases due to climate change, while demand increases due to rapid population growth. The GLOWA Jordan River project generates science-based management strategies for maximizing water productivity under global climate change. We use a novel definition of water productivity as the full range of services provided by landscapes per unit blue (surface) and green (in plants and soil) water. Our combined results from climatological, ecological, economic and hydrological studies suggest that, in Israel, certain landscapes provide high returns as ecosystem services for little input of additional blue water. Specifically, cultural services such as recreation may by far exceed that of food production. Interestingly, some highly valued landscapes (e.g. rangeland) appear resistant to climate change, making them an ideal candidate for adaptive land management. Vice versa, expanding irrigated agriculture is unlikely to be sustainable under global climate change. We advocate the inclusion of a large range of ecosystem services into integrated land and water resources management. The focus on cultural services and integration of irrigation demand will lead to entirely different but productive water and land allocation schemes that may be suitable for withstanding the problems caused by climate change.

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Resource Description

Communication: ☒

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

Communication Audience: ☒

audience to whom the resource is directed

Policymaker

Exposure : ☒

weather or climate related pathway by which climate change affects health

Climate Change and Human Health Literature Portal

Food/Water Security

Geographic Feature:

resource focuses on specific type of geography

Ocean/Coastal

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Asia

Asian Region/Country: Other Asian Region

Other Asian Region: eastern Mediterranean

Health Co-Benefit/Co-Harm (Adaption/Mitigation):

specification of beneficial or harmful impacts to health resulting from efforts to reduce or cope with greenhouse gases

A focus of content

Health Impact:

specification of health effect or disease related to climate change exposure

Health Outcome Unspecified

Intervention:

strategy to prepare for or reduce the impact of climate change on health

A focus of content

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Adaptation

Resource Type:

format or standard characteristic of resource

Research Article

Resilience:

capacity of an individual, community, or institution to dynamically and effectively respond or adapt to shifting climate impact circumstances while continuing to function

A focus of content

Timescale:

time period studied

Time Scale Unspecified